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ABSTRACT

This report investigates professional knowledge and learning demands associated with high school reform initiatives, and corresponding opportunities for teacher development, emphasizing literacy and mathematics. It examines how teachers' learning in selected reform-specific areas is facilitated or impeded by internal school features and by the nature and extent of teachers' ties to external sources of expertise. The research uses intensive case studies of teachers' knowledge, practice, and learning in two comprehensive high schools. It includes existing case study data on restructuring high schools, supplemented by intensive multi-level case studies in new sites. These sources provide three configurations of high school reform, professional development, and accountability, reflecting a range of school improvement conditions at a point in time and a trajectory of reform and policy conditions over the past decade. This report summarizes research completed in the first 2 years of a 3-year study of teacher learning in the context of high school reform. Section 1 locates new cases in a regional context of professional development and other forms of assistance. Section 2 introduces the two case study sites and summarizes preliminary findings. Section 3 comments on discoveries to date and priorities for subsequent analysis. (Contains 31 references.) (SM)

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Teacher Learning, Professional Community, and Accountability in the Context of High School Reform

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NPEAT
NATIONAL PARTNERSHIP FOR EXCELLENCE AND ACCOUNTABILITY IN TEACHING

D.C. Rhodes

June 2000

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Teacher Learning, Professional Community, and Accountability in the Context of High School Reform

Final Report
National Program for Excellence and Accountability in Teaching (NPEAT)
Office of Educational Research and Improvement

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University of California, Berkeley
June 12, 2000

This project investigates the professional knowledge and learning demands associated with high school reform initiatives, and the corresponding opportunities for teacher development, with emphasis in the areas of literacy and mathematics. It takes its point of departure from the repeated claims that high schools change least and slowest, even where offered substantial incentive and resources for change. The project devotes close attention to the ways in which teachers' learning in selected reform-specific areas is facilitated or impeded by the internal features of the school workplace and by the nature and extent of teachers' ties to external sources of expertise.

The project employs a multi-level case study design centered on intensive case studies of teachers' knowledge, practice, and learning in two comprehensive high schools. The research design relies principally on intensive ethnographic methods to investigate: (a) the ways in which the substance of dominant reform initiatives coincides with or departs from teachers' knowledge, belief, preference, and practice (how great are the knowledge demands introduced by reform goals and strategies?); (b) how the processes of reform serve to enhance or diminish teachers' motivations and opportunities to learn; and (c) the content of formal and informal professional development activity, and its apparent relationship to teaching practice. To the extent possible, the project also attends to the ways in which teacher expertise, belief, and professional orientation mediate student experience and opportunity for student learning. The multi-level design permits the team to investigate professional development at the levels of individual experience, professional community, and organizational capacity for teacher support and instructional improvement.

The research has been designed to capitalize on existing case study data on restructuring high schools, supplemented by intensive multi-level case study in a small number of new sites.[1] Taken together, these sources supply us with three configurations of high school reform, professional development, and accountability:

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[1] The School Restructuring Study (SRS, 1995-1998) coincided with the final three years of a state-funded restructuring program. Funded by the Stuart Foundation and Hewlett Foundation, the study examined the restructuring choices made by 36 elementary, middle, and high schools, and the significance of those choices for students and teachers (see Little & Dorph, 1998). Ongoing analyses of the high school data subset, together with a new round of case study research in high

Configuration 1: Locally designed whole-school change supported by discretionary resources made available through a state demonstration program in school restructuring (1992-1997). Professional development focus was defined by restructuring schools and supported by supplemental restructuring funds. Accountability resided in official "demonstration" status and participation in a statewide network of funded schools. Schools were accountable for annual reports of progress to the state and to a state-wide network of funded schools. As a condition of funding, schools were required to collect data on reform progress and student performance, and to report their progress in an annual "Symposium."

Configuration 2: Locally designed whole-school change supported by a regional program of school reform funding from private sources (Annenberg/Hewlett). Professional development focus is defined at the school level, but is increasingly shaped by response to state policies and program initiatives related to standards, testing, and accountability. Under terms of the Annenberg grant, schools are expected to develop internal mechanisms of accountability; external accountability resides in an ongoing formal evaluation and regular review of achievement data and other indicators of school improvement, accompanied by financial sanctions. Schools are accountable to local private funders, but in a climate of intensifying state pressure and sanctions.

Configuration 3: Improvement activities located within subject departments of a school that is otherwise uninvolved in programs of whole-school change and unaffiliated with known reform networks, but that is increasingly pressed to respond to state standards, testing, and accountability policies. Professional development focus and resources have increasingly been linked to compliance with standards and testing imperatives. Internal mechanisms of accountability have resided primarily at the department level except for conventional forms of teacher evaluation; new external mechanisms of accountability center on test performance, with sanctions for schools and students controlled by the state.

These three configurations reflect both a range of school improvement conditions at a point in time (configurations 2 and 3) and a trajectory of reform and policy conditions over the past decade (the shift from configuration 1 to configurations 2 and 3). Put most broadly, the reform climate in the state has moved from a relatively progressive mood to

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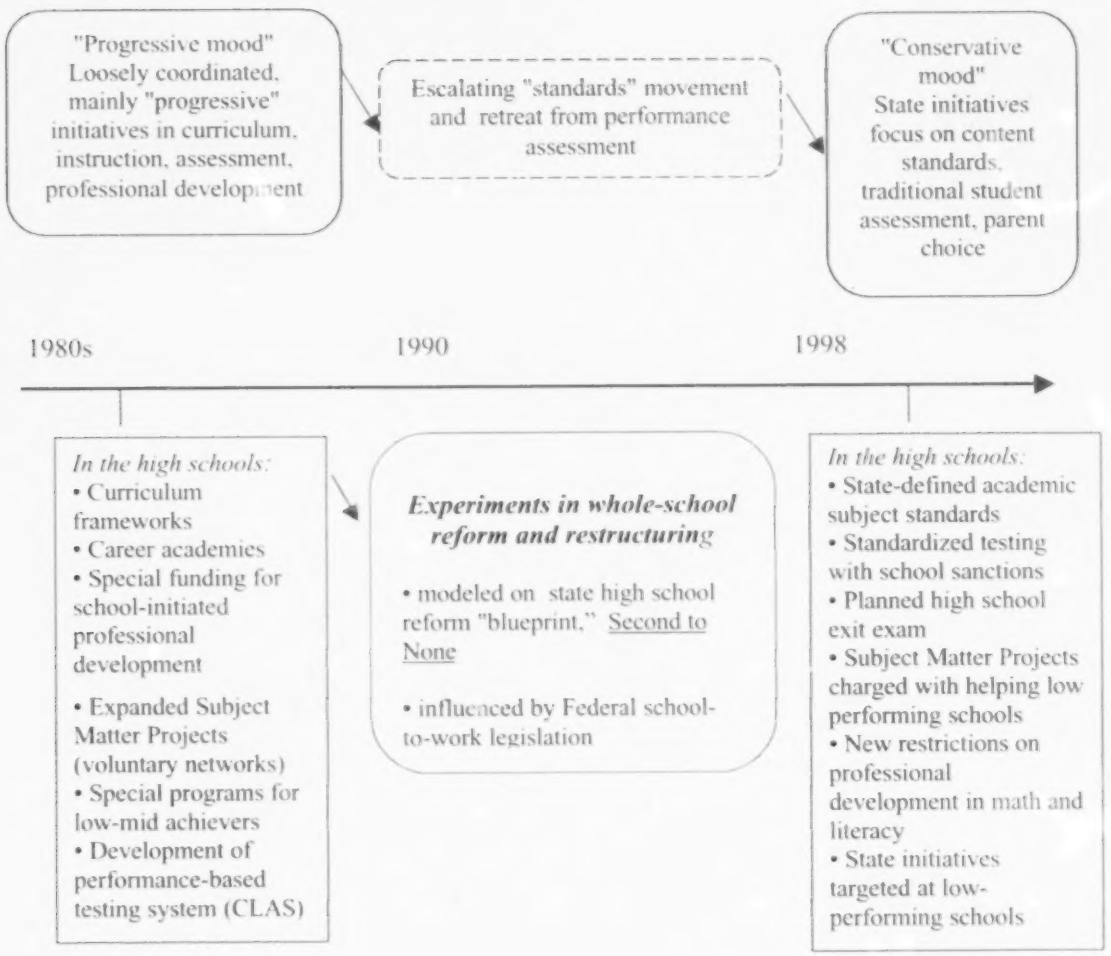
schools (1998-2001), have been supported by the Spencer Foundation and by the U.S. Department of Education, Office of Educational Research and Improvement, National Program for Excellence and Accountability in Teaching (NPEAT). We have supplied pseudonyms for school sites and all school and district individuals. Individuals associated with widely known professional development activities, such as the California Writing Project, may be cited by name, with permission.

a more conservative one, from resource flexibility to resource controls, from open-ended invitations to "restructure" to uniform mandates centered on state standards and high-stakes testing (see Figure 1).

Figure 1
State Reform and Policy Contexts for Restructuring High Schools in California


"Progressive mood"
Loosely coordinated, mainly "progressive" initiatives in curriculum, instruction, assessment, professional development
Escalating "standards" movement and retreat from performance assessment
"Conservative mood"
State initiatives focus on content standards, traditional student assessment, parent choice
1980s
1990
1998
In the high schools:
• Curriculum frameworks
• Career academies
• Special funding for school-initiated professional development
• Expanded Subject Matter Projects (voluntary networks)
• Special programs for low-mid achievers
• Development of performance-based testing system (CLAS)
Experiments in whole-school reform and restructuring
• modeled on state high school reform "blueprint," Second to None
• influenced by Federal school-to-work legislation
In the high schools:
• State-defined academic subject standards
• Standardized testing with school sanctions
• Planned high school exit exam
• Subject Matter Projects charged with helping low performing schools
• New restrictions on professional development in math and literacy
• State initiatives targeted at low-performing schools

The first of these configurations was the focus of our Year 1 analysis of existing data from the School Restructuring Study (Little, 1999; Little, in press). Although that study was charged with tracing the definition and progress of reform in the local sites, and thus was not centered wholly on questions of teacher development, we found that the data spoke directly and explicitly to such questions and issues. Put briefly, high schools that engaged in programs of ambitious, voluntary, comprehensive school restructuring:

- employed professional development resources primarily for whole-school activities designed to rally support for restructuring goals and priorities, and to inspire individual change in teaching practice;

- attempted to cultivate opportunities for teacher learning that were collaborative and consistent with a "culture of inquiry," but that remained infrequent and weakly connected to ongoing practices of curriculum development, instruction, and student assessment at the individual and department level;

- under-estimated the importance of established professional communities within the school, especially those tied to the subject departments, as a resource for or impediment to change;

- devoted little systematic attention to the knowledge and learning demands associated with the programmatic and structural changes that made up the restructuring plan;

- remained weakly and unevenly connected to robust sources of professional development outside the school, especially those focused on teaching and learning in academic subject areas (with a few significant exceptions, external ties were confined to organizations that focused on processes of whole-school change rather than on domains of teaching and learning); and

- were vulnerable over time to shifts in the reform and policy landscape, most specifically to the escalating standards and testing movement, that bore specific implications for the allocation of professional development resources.

These discoveries reinforced our conviction that a more focused investigation of teacher learning in the context of high school reform was in order, and that our sampling strategy should take account of the multiple (and potentially competing) conceptions and contexts of reform. The new case study research was conducted in two sites that differed in their association with whole-school change initiatives but which each provided indications of well-developed support for teacher learning and instructional improvement. Figure 2 displays the case sampling strategy, in which we sought new cases that varied in their orientation to whole-school change but where school reputation and screening visits both indicated a potentially high investment in professional development.

Figure 2
Sampling Priorities for the Study of Teachers' Professional Development in the Context of Reform

		Whole-School Reform Activism and Improvement Focus		
		Active in Whole-School Change, High Focus on Improvement	**Low/Moderate Whole-School Change Activity, High Focus on Improvement**	**Low Whole-School Activism, Low Focus on Improvement**
Professional Development Focus and Strategy	**H**	1 *Configuration 2* *New Case—* South HS	2 *Configuration 3* *New Case—* East HS	3 *No Case*
	L	4 *SRS Data Set (Configuration 1):* dominant pattern in previous round of case studies	5 *No Case*	6 *No Case*

This report summarizes research completed in the second and final year of NPEAT activity. It draws principally from the first ten months of case study inquiry into teachers' professional development in two contrasting but overlapping conditions of high school reform—reform based in a voluntary, locally-initiated program of whole-school restructuring, and reform organized by the imperatives of state standards and testing programs.[2] By design, this is a small, intensive case study investigation. We reason that the kinds of relationships we are attempting to uncover will require us to remain close to teachers' practice, in and out of the classroom, in ways we were unable to achieve in the earlier study of 36 restructuring schools. At the same time, as our sampling design indicates, we do not expect that these schools are somehow unique.

[2] Readers should note that data collection is incomplete at the time of this writing, and that our analysis of the available data is in its very earliest stages. This report reflects our preliminary analysis at the end point of NPEAT funding; the project will continue with funding from the Spencer Foundation. The original NPEAT design called for data collection in three sites. The third site fit the conditions of Cell 4, and was dropped in Fall 1999 for a variety of reasons, including the cutback in OERI funds.

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The report is organized in three sections. The first section locates the new cases in a regional context of professional development and other forms of assistance; specifically, it outlines the principal sources of assistance available to high schools for the pursuit of whole-school change and for professional development in the specific areas of mathematics and literacy. The second section introduces the two case study sites and summarizes our preliminary findings from the initial round of case study research. At this stage of project development, these summaries are primarily descriptive in nature. A concluding section offers commentary on the discoveries to date and the priorities for subsequent analysis.

The Regional Context of Professional Development in Literacy and Mathematics

As a complement to the case study work, the research team has made an effort to map the landscape of professional development opportunities in the geographic region most proximate to the case study schools, with a special emphasis in the areas of math and literacy. We wished to familiarize ourselves with the configuration of professional development opportunity for high school teachers in the San Francisco Bay Area as a context for our own case study work and as an illustration of the configuration of resources available to teachers in a large metropolitan area. We made no assumptions that teachers in our case study schools were directly linked to these providers, but reasoned that these were available resources to which individuals, groups, and schools might turn. That is, we were interested in considering the resources employed by the schools within a locally available universe of alternatives.

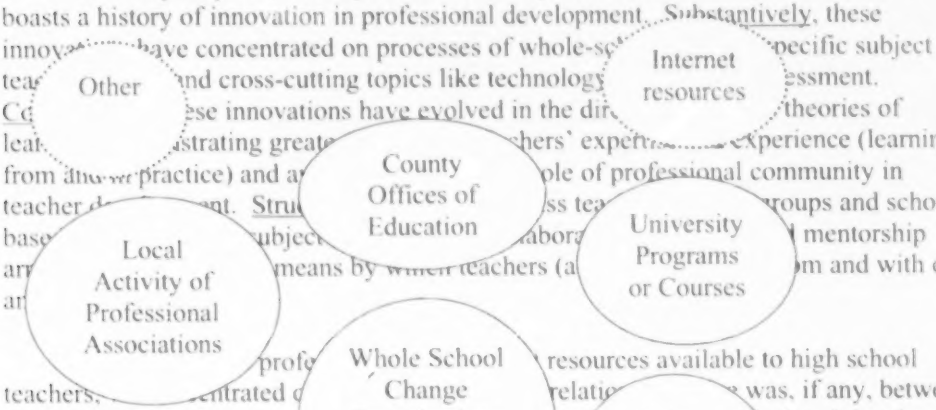
To map this universe of alternatives, we began by interviewing the directors and/or other key staff of regionally known providers of professional development in literacy and mathematics. We also interviewed leaders of the two dominant local reform organizations, the Bay Area School Reform Collaborative (BASRC) and the Bay Area Coalition of Essential Schools (BAYCES) regarding their overall conception of professional development, the place of subject-specific professional development in a strategy of whole-school change, and their specific knowledge of and support for professional development support in math and literacy. However, we cannot claim to have canvassed all possibilities, and our current map is by no means exhaustive. At this writing, for example, we have done relatively little district level interviewing and none within county offices of education. Together, the elements of our strategy can be depicted as shown in Figure 3.

In looking to the broader configuration of resources, we also sought to identify issues and options that deserved special attention as we attempted to make sense of the multiple contexts of teachers' professional development.

Figure 3

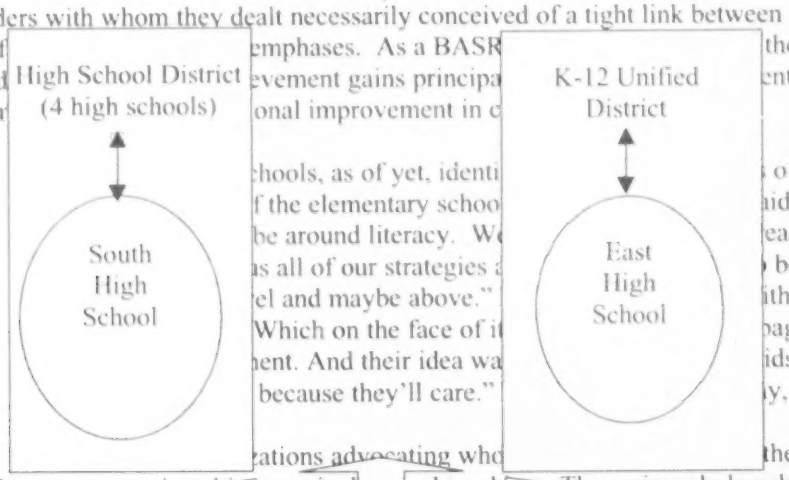
Regional Networks in the Landscape of Professional Development Opportunity

In many respects, the Bay Area is rich in professional development resources and boasts a history of innovation in professional development. Substantively, these innov[illegible]ave concentrated on processes of whole-sc[illegible]pecific subject tea[illegible]nd cross-cutting topics like technology[illegible]essment. Co[illegible]se innovations have evolved in the dir[illegible]theories of lea[illegible]strating greate[illegible]chers' experti[illegible]experience (learning from [illegible] practice) and a[illegible]ple of professional community in teacher d[illegible]nt. Stru[illegible]ss tea[illegible]roups and school-base[illegible]ubject[illegible]abora[illegible]mentorship ar[illegible]means by which teachers (a[illegible]m and with one ar[illegible]



profe[illegible] resources available to high school teachers. [illegible]ntrated c[illegible] relati[illegible]e was, if any, between professi[illegible]opment [illegible]l c[illegible]ssional development in[illegible]liter[illegible]O[illegible]sue grew out of c[illegible]g [illegible]ata[illegible]ame apparent that w[illegible]cesse[illegible]ool re[illegible]sconnected from insti[illegible]ment processes and resources wi[illegible]urricular areas (Little, 1999, Little & Dorph, 1998). Such a disconnect seemed problematic in light of the state's espoused reform goal of raising overall student achievement in core academic areas and narrowing achievement disparities attributable to student background.

Nonetheless, we discovered that neither the reform organizations nor the school leaders with whom they dealt necessarily conceived of a tight link between these two prof[illegible]emphases. As a BASR[illegible]the high schools tend[illegible]evement gains principa[illegible]ent engagement or n[illegible]onal improvement in c[illegible]



[illegible]chools, as of yet, identi[illegible] of a content-[illegible]f the elementary schoo[illegible]aid, "Our [illegible]be around literacy. W[illegible]leading and [illegible]s all of our strategies a[illegible]be able to read [illegible]el and maybe above." [illegible]ith things like [illegible]Which on the face of it[illegible]bag of strategies, [illegible]ent. And their idea wa[illegible]ids, then they [illegible]because they'll care." [illegible]y, 1999)

[illegible]ations advocating who[illegible]their attention on improvements in [illegible] The major whole-school change organizations in the Bay Area, BASRC and BAYCES, relied principally on developing generic Opportunities and supports for teacher learning within schools [illegible]rotocols" and rubrics for structuring reviews of student work and other data related to student and

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school performance), intensifying their investment in coaching and consultation, networking among schools, and establishing external accountability mechanisms. Indeed, the Bay Area School Reform Collaborative initially confined its pool of reform partners to organizations that explicitly engaged in the work of whole-school change, and left it up to individual schools to establish ties with programs or organizations whose work fell in specific areas of curriculum and teaching. As a spokesperson for BASRC explained:

> Among the things that we don't do, we do not do subject matter professional development of any kind. ... Our theory is that if we channel certain tools and certain funding into schools, they'll be able to service their own needs around content and pay for support in those areas. [BASRC interview, May, 1999]

Over time, these organizations have made moves to attend more fully to the challenges associated with change in the high school. In part, these moves have entailed a closer look at opportunities for professional development in subject areas, especially literacy, which has begun to surface as a priority among the high schools. Toward that end, BAYCES has developed a reform partnership with the Strategic Literacy Initiative to work jointly in selected middle and high schools. BASRC has modified its criteria for reform partners to include those focused specifically on subject teaching.

Research on teacher knowledge and teaching practice underscores the significance of "pedagogical content knowledge," a formulation first developed by Shulman (1987) and extended by his students and by others.[3] Although state policy-makers frequently espouse the view that subject knowledge is sufficient for purposes of teaching, we draw on the body of work inspired by Shulman to argue that gains in student achievement will remain elusive unless subject knowledge is joined to facility with subject teaching knowledge and practice.

To what extent, then, does the regional landscape of professional development afford teachers the opportunity to strengthen knowledge and practice in subject area teaching?[4]

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[3] See Grossman and Stodolsky, 1994; Grossman, Wineburg, and Woolworth, 2000; Wilson and Wineburg, 1988; Wilson, Lubienski, & Mattson, 1996.

[4] We acknowledge that our subject-specific focus may lead us to overlook teacher development opportunities that afford teachers new insights into their subject teaching by participating in interdisciplinary groups, networks, or activities. Prominent among these possibilities are teacher research groups, some of them with a long and active history in the Bay Area. For example, one teacher in our case study sample reports that his out-of-school teacher research group enables him to look closely at video-taped excerpts of his teaching and to raise questions about teaching and learning that he cannot raise within his department—even though he finds the department to be professionally supportive and innovative.

Opportunities for professional development in literacy

Our efforts to map regional professional development in the area we defined broadly as "literacy" were quickly shaped by three factors. First, this region is home to the legacy of the Bay Area Writing Project, a local tradition that has gained statewide and national legitimacy and prominence. The Writing Project offers a well-established tradition of professional development rooted in recognition of teacher expertise and in strategies for "teachers teaching teachers." Although the mission and target audiences of the Writing Project have evolved over time, it has preserved its core principles and processes.[5] When we thought about a landscape of opportunity in the area of literacy, the Writing Project came first to mind. When we asked others to nominate resources, the Writing Project was typically first on the list. According to Writing Project leaders, the organization serves up to 5,000 teachers each year in a seven-county Bay Area region, in activities ranging from its small invitational leadership institute to Saturday seminars, in-school workshop series, and teacher research groups. That is, the influence of the Writing Project stems in part from the core principles by which it operates and in part from the scale of its activity over many years.

Second, the term "literacy" does not coincide neatly with English as a subject in the high school curriculum or with the conventional sources of professional development for English teachers. What kinds of professional knowledge and practice were encompassed in this term, and who might we expect to be the participants in professional development activity? The ambiguity entailed in "literacy" became apparent as we came to appreciate that students' writing (and to a lesser extent oral expression) were commonly seen as falling within the instructional purview of high school teaching, but that reading was an unfamiliar focus of instruction and professional development at the high school level. The Strategic Literacy Initiative (formerly HERALD, one of a national network of humanities collaboratives) combined teacher development with curriculum development and instructional innovation by involving interdisciplinary teams of high school teachers in investigations their students' literacy learning. In recent years, SLI's work has focused increasingly on reading as an emphasis of professional development activity; teachers begin by developing a more explicit awareness of their own reading practices. Over time, teams of teachers examine cases of students' reading improvement, develop their own cases, and introduce a range of strategies in their classrooms. Teachers in some schools have introduced special "academic literacy" classes designed to help students develop metacognitive strategies for reading in a variety of subject disciplines and genres. An ongoing program of research, conducted by the project's co-directors,

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[5] The Writing Project originated as a means of enabling high school English teachers to prepare their college-bound students to pass the University of California's writing assessment ("Subject A"). Over time, it broadened its participants to include elementary, secondary, and college teachers of writing, and broadened its mission to encompass the teaching of writing to all students. Most recently, the Writing Project has been pressed to devote more of its time and resources to work with teachers in low-performing schools. For a recent account of the Writing Project's core principles and elements, and accounts of the benefits that teachers derive from participation, see Lieberman and Wood (in press).

provides evidence of the program's contributions to teacher development and student learning.[6]

Third, the political pendulum swing from a whole language emphasis to a back-to-phonics emphasis in state standards, with corresponding restrictions on the use of state resources, has spawned an array of new vendors in the professional development marketplace but has done relatively little to expand the resources targeted usefully to the high school. Most state resources have been concentrated on reading at the elementary level; further, to gain "approved provider" status, professional developers must concentrate on phonics instruction. However, high school students are more likely to experience reading problems associated with comprehension or other issues than with basic decoding, while their teachers often remain at a loss to identify students' difficulties or an instructional remedy (Gilmore, 1985; Greenleaf and Shoenbach, 1998; Kintsch, 1998; Taylor, Graves, and van den Broek, 2000). High school teachers are less likely than elementary teachers to have had any formal preparation in teaching reading, and less likely (even in English departments) to see themselves as teachers of reading.

Opportunities for professional development in mathematics—curriculum innovations beset by the math wars

In mathematics, innovations in professional development combine components of curriculum experimentation, long-term teacher collaboration or networking and inquiry into processes of teaching and learning. Experiments with innovative math curricula for the high school level, initiated by university-based mathematics educators, developed into two programs with extensive professional development components: the Interactive Mathematics Program (IMP) and College Preparatory Mathematics (CPM).[7]

A teacher in one of the earlier SRS case study schools provides testimony to the power she found in IMP training. In a lengthy and compelling account, she details the way in which mathematical investigations undertaken with other math teachers over a four year period enabled her to examine and change her own practice. Her learning began with the jarring realization that her students (especially those with a previous record of failure in mathematics) might be capable of more than she had thought. It continued as she began exploring her own mathematical understanding more fully in the company of other math teachers experimenting with IMP's alternative curriculum materials:

> I think I've been through a lot of growth, personal change, because this is 26 years of teaching now and I taught my first 18 years or so exactly the way I was taught which is—you can picture the scene. And to change... that was not any automatic overnight thing for me at all. I remember seeing a presentation at a conference where someone was showing student work … and looking at that going... "Wow, none of my kids do this!"

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[6] For a summary of recent research findings, see Greenleaf & Schoenbach, 1998; for a practitioner guide to the literacy practices arising from the program, see Schoenbach, Greenleaf, Cziko, & Hurwitz, 1999.

[7] We have not yet completed interviews with individuals responsible for designing or conducting professional development for CPM.

> There was a lot of writing and explaining. That was my first... uh... curiosity: how do you get kids to do that?! I had no idea.
>
> At our training, we really bonded with our group. … We all had different degrees of strength in mathematics. But we had to get comfortable with each other and really put it on the line. Hey, we don't really all know everything here. We are all going to approach these problems differently, and recognize that there is a parallel to what our kids would go through. But there were many times when we were terrified! And the big eye opener was when we do this unit where [students] are introduced to the derivative in the third year, and the way they [IMP designers] approach it is so conceptual. You really get it from all of us looking at each other saying, "Oh, I took all this calculus, and now I am finally getting it!" And we could admit that! [Math teacher, North Meadow High School, 1996]

In the four years since we observed and spoke with this teacher, the math wars have taken their toll on the Interactive Math Program. Fewer schools in the Bay Area (and we would anticipate throughout California) are electing to adopt the program as a formal option for students and teachers. However, teachers continue to express interest in the curriculum philosophy and teaching approach it embodies and the quality of professional development it promises. A teacher in one of our current case study sites says she is attracted to IMP because it builds a curriculum on "big problems" that help students connect meaning to mathematics. "I go to any IMP thing I can find." For more intensive training in the curriculum and instruction of IMP, she plans to participate in week-long institute offered by Key Curriculum Press.

Other kinds of local innovation stem from prior experiments with teacher collaboratives and networks, although formally organized network opportunities are somewhat less developed and less stable than in mathematics than in literacy. From the mid-1980s to the early 1990s, San Francisco served as home to one of 15 local sites of the Urban Mathematics Collaboratives. Local high school teachers attested to the value of network participation for their professional growth and as a source of teaching support (Lichtenstein, McLaughlin, and Knudsen, 1991; Little & McLaughlin, 1991), but the Collaborative was confined to a single district and disbanded after funding ended.

Other networks have sought participation on a broader regional scale. Stimulated by the success of the Writing Project, the University of California launched the California Math Project (and eventually a total of nine California Subject Matter Projects in various fields). Even at its most active period, however, BAMP claimed a relatively small constituency of high school mathematics teachers:

> Most of our work was at the elementary level, then middle school, and then secondary. … One aspect of math education remains fairly consistent. Things were more widely accepted in elementary than secondary. Middle school became a real exception to that for awhile, probably having to do with the California Systemic Initiative (Renaissance Math). …The biggest shortcoming was that it didn't last long enough. Also it was only in middle school. Nobody's really ever had to the money to make inroads into high school. …High school is a really tough area. We were fortunate in BAMP we had teachers coming to us. We got to work with the people who wanted to see change. There were relatively few

high school teachers. Although I know there are wonderful high school teachers out there who do wonderful things, probably it's easy to say that the typical high school math teacher is pretty traditional.

The California Math Council, an affiliate of the National Council of Teachers of Mathematics (NCTM), organizes an annual conference of math educators at Asilomar, a state-owned conference retreat on the Monterey Coast (about 2.5 hours drive). Anecdotal evidence suggests that this conference offers an important networking and professional development opportunity for reform-oriented math teachers, but we have no figures to indicate what proportion of the attendees teach in high schools or work in Bay Area schools. In both bodies of case study data analyzed for this NPEAT study, math departments varied dramatically in their knowledge of and participation in the annual CMC conference (for example, one of the current case study departments made it a priority for all its teachers to attend, while the other department had no one attending).

Mathematics is more clearly defined as a field of academic study than is "literacy," but has emerged as an even more contentious, politicized arena of state policy and professional discourse. Regional professional development in mathematics mirrors the trajectory of the mathematics reforms (mid-1980s to mid-1990s) followed by a growing reform backlash (the "math wars"). The earlier reforms in the state paralleled those of the National Council of Teachers of Mathematics (NCTM) and were embodied in the 1985 and 1992 California Mathematics Frameworks. By 1992, the NCTM standards had become the focus of new curriculum materials and a wide array of professional development opportunities. When the California State Board of Education in 1997 adopted the *Mathematics Content Standards for California Public Schools, Kindergarten Through Grade Twelve*, it granted official sanction to the critics of the 1992 framework and corresponding NCTM reforms, embracing a skill-focused, back-to-basics approach. As a more conservative mood gained ascendancy, progressive forms of professional development fell under attack.

Tightened state controls on local professional development

Teachers' access to subject-specific professional development has shifted over the past decade in the direction of expanded options and quality, but fewer discretionary resources and tighter policy restrictions. A state policy study completed more than a decade ago (Little et al., 1987) reported relatively low public investment in subject-specific professional development. In the years since that report was issued, state funding for the California Subject Matter Projects expanded and new state initiatives have highlighted professional development in literacy and mathematics. However, the expected purpose, content and format of state-supported professional development have come under increasing policy scrutiny.

Recent state initiatives restrict the uses of professional development dollars, employing a state approval process to link professional development activity tightly to state standards. Under the terms of recently enacted legislation, the state has authorized

multi-million dollar allocations for professional development in reading, literacy, and mathematics. However, districts may use those resources only for professional development provided by state-approved providers. As a condition of their renewed state funding, the California Subject Matter Projects are now required to devote a majority of their "teacher contact time" to teachers in low-performing schools, to shift from a model of individual participation to a model of school partnership and school change, and to adopt a more explicitly favorable stance toward state standards.

Viewed from the perspective of policy coherence, the recent state initiatives constitute a move toward greater alignment of curriculum policy and teacher policy, and a tighter coupling of state policy and local practice..[8] For those local educators in agreement with the substance and orientation of the state policies, this move has certain clear benefits. However, our own data make clear that agreement among educators is far from uniform. Those who lament or oppose the shift in state policy must contend with a dampening effect on innovation and variation in professional development practice—or more specifically, on the type of professional development practice and innovation that are possible with public dollars. In this climate, schools and teachers interested in alternative content and format must rely on private sources of funding or on out-of-pocket expenditures.

In such a climate, professional development has become highly politicized. The Bay Area Math Project had virtually disintegrated at the time of our queries, a victim of the mounting "math wars." According to a former director:

> BAMP had been a service organization. We never promoted any specific curriculum. The whole idea was to help teachers find things that they could bring to their situations. We offered in-services in IMP & CPM but also stuff on calculators, writing across the curriculum, assessment. We never had much call on the other hand to implement Dolciani [a traditional math book]. … We served the need for teachers who wanted to reach out, to try something new. We always had an open door policy. We seldom saw many traditional teachers. The one exception to this was with technology. We did see people from the Dolciani books from that. We also had a tremendous span of teachers from Kindergarten to 12 grade.

These state initiatives and the related political disputes differentially affect the entities depicted in our regional map. Districts, county offices, and state-funded projects (especially the California Subject Matter Projects) feel the effects directly as they construct responses to new controls on content, process, and resource allocation. Privately funded projects and providers, while not directly constrained in the same ways, experience the effects of policy indirectly through the restrictions on local expenditures.

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[8] It is worth distinguishing educators' judgments about specific provisions of state policy (the nature of subject standards, for example) from their judgments about the proper role of the state. CPRE researchers investigating local responses to standards in four states find that many teachers defer to the state in the setting of standards even when they believe that the standards are unattainable for many students and when they find assessments unfair (see Siskin, 2000).

Professional associations—or subgroups within them—have supplied forums for discussion and debate as accountability pressures have intensified.

In part due to fluctuations in policy and in part for other reasons, providers of professional development—even within the same subject area— may operate on different conceptions of teacher learning, establishing different priorities and employing different strategies. To simply list an array of programs or providers suggests little about the actual breadth, depth, and orientation of professional development resources, or, more important, what it would mean for schools or teachers to select to work with any particular program or provider.

Yet despite fluctuating resources and colliding reform trajectories, the Bay Area offers an impressive history of innovative models and a rich pool of experience. Altogether, the region is well supplied in professional development resources. This brief description does not begin to afford a complete inventory of those resources, although it does characterize the types of innovation most commonly underway and does incorporate the programs or organizations most widely cited. At issue, of course, is how thickly or thinly spread those resources become when distributed among the region's 160 high schools and several thousand teachers of math and English—and indeed, which of the well-known programs and providers take high schools as their domain at all.

Resources beyond the region

Although our mapping exercise concentrated on locally available programs and other resources, the regional boundaries proved permeable and elastic in several ways that became apparent as we began our case study work with individual schools and teachers.

First, the internet supplies both substantive resources and professional affiliations. A periodic review of entries on the CATEnet listserve throughout the 1999-2000 school year found participants exchanging ideas for curriculum, sharing insights from their own personal and professional reading, weighing in on national controversies over reading research and standards, and organizing to resist high-stakes testing. Teachers at one of our sites employed the internet—particularly the web site created by FairTest— to acquaint themselves with alternative views on standards and assessment in the hopes of widening the terms of discussion in their school and district. The internet also provides a resource to assemble face-to-face meetings of like-minded teachers who span many districts and levels; in one recent forum, teachers from several districts added to their inventory of informative web sites regarding the use of high-stakes tests and planned further action at the local and state level.

Second, the strong local presence of the Bay Area Coalition of Essential Schools (BAYCES) and the Annenberg School Reform Institute (in the form of BASRC) suggests how national reform organizations may influence local perspectives and supply specific strategies for professional development. At the school and teacher level, we

have become interested in the relative significance of a school's affiliation with such organizations at different points in time. For example, the early stages of restructuring in one of our sites coincided with the Coalition's national institutes for Math/Science Fellows ("the best professional development I've ever had"), the Thompson Fellows Program to prepare reform-oriented principals, and the formation of the National School Reform Faculty. Teachers and administrators in the school speak of the impetus for learning and innovation inspired by a strong connection with the national group. Over time, the Coalition has decentralized, limiting the professional development opportunities and diminishing the sense of connection to a national community. In addition, the local reform organizations—though privately funded—have pushed harder on member schools to demonstrate progress on the measures of public accountability required by the state. In effect, the balance between professional support and organizational pressure appears to have shifted.

Finally, subject matter associations, networks, and other groups constitute important sources of professional growth and affiliation for some teachers. Fifty years ago, a group of English teachers from schools and colleges formed the Curriculum Study Commission; the group continues to organize an annual conference at nearby Asilomar, which it co-sponsors with other professional associations of English teachers. The conference is built on the model of a three-day seminar, with attendees picking a seminar and remaining with a group throughout the weekend. Similarly, the state affiliates of NCTM (California Mathematics Council) organizes an annual conference at Asilomar. At issue is how visible these associations are at the local or regional level, and how much space they take up in the landscape of professional resources and relationships identified by the teachers and subject departments in individual schools.

Conditions of Teacher Learning and Reform in Two Schools

Although both of our intensive case study sites must now contend with a rapidly centralizing system of standards, testing, and accountability, they approach these new policy conditions with quite different histories and circumstances.[9] Professional development and professional community are central elements in these contrasting school profiles. We emphasize at the outset that by employing a language of contrast, we do not imply judgments about worth or effectiveness. Each school, by virtue of its history and conditions, is positioned to accomplish something that the other is not. Each operates with its own set of resources and constraints to interpret the current reform initiatives. Teachers in both schools have established strong links to sources of expertise and support outside the school, but these links are of different sorts and significance to the teachers who maintain them.

[9] For the importance of considering how schools are positioned by history and circumstance in relation to standards-based reforms, see DeBray, Parson & Woodworth (2000) and Siskin & Lemons (2000).

A small case study design relies heavily on the well-chosen case. In retrospect, nearly a year into our data collection, we remain convinced that our initial site selection resulted in well-chosen cases. Both schools might reasonably be considered among the targets of state policies aimed at reducing disparities in student achievement and educational attainment. Both enroll a student population that is racially, ethnically, and economically diverse. In both schools, fewer than 60% of the students complete coursework requirements for admission to the state's university system, fewer than 40% take the SAT, and the 12th grade cohort is substantially smaller in size than the 9th grade cohort, despite low official rates of dropout. As befits a contrast case design, the schools also differ along some expected dimensions related to their quite different histories of involvement in whole-school change and their configuration of professional development opportunity.

Studying professional development in the context of daily practice and school reform

To pursue the dual aims of this study required getting close to the experiences of teachers and the multiple contexts of their work in schools, districts, and professional activities. As an integral part of our case study design, we mapped outward from teachers, departments, and schools to determine the configuration of teacher learning opportunities. We employed a range of conventional data sources and methods for our mapping—observation, interviews, pen-and-paper instruments, and school documents—but the most crucial of these are the video- and audio-taped records of situated interaction among teachers.

In each site, we have made an effort to create selected "stream-of-practice" records that (a) reveal teachers' conceptions of subject, pedagogy, and students, (b) illuminate the knowledge and learning demands associated with ongoing practice and reform expectations; and (c) display norms of professional interaction and the ways in which they are conducive (or not) to professional learning. These stream-of-practice records do not constitute the entire data set for the school, but they provide our most intensive look at the teaching and learning conditions for teachers in the context of daily work. At East High School during the 1999-2000 school year, these records were centered on two groups of 9th grade teachers: the "algebra group" comprising 7 math teachers and the "academic literacy" group of 5 English teachers. At South High School, we concentrated on a combination of department meetings and whole-staff gatherings (a two-day retreat and a weekly two-hour block of time reserved for professional development and school improvement work).

In creating profiles of the two schools, we draw from the available data to gauge the impetus for teacher learning as we understand it at this stage of our analysis. We then summarize the range of formal and informal learning opportunities made visible by our observations and interviews, and the ways in which they are supported or constrained by organizational policies, practices, and leadership. We further situate the teacher

development resources and constraints in relation to the school's reform endeavors and its internal and external mechanisms of accountability.

Our descriptive profiles constitute a first step in our efforts to articulate the impetus or focus for teacher learning in each school (learning demands) and to map the range of learning opportunities we have uncovered in each school. Borrowing an analytic device from Stokes (in press), our subsequent analyses will employ our observations and interviews to assess what kinds of learning are enabled (or not) by each professional development opportunity.

South High School: Active in whole-school reform, strong school-wide community, and links to reform networks

The simplest (and necessarily over-simplified) rendering of professional development at South High School is that it is demonstrably a collective enterprise, resolutely tied to problems of school improvement to a degree that is highly unusual at the high school level. Visitors to South cannot help but notice the degree of school-level focus on teaching and learning and the continuity of effort that permeates discussions among staff. Indeed, the school recently earned the highest accreditation rating, a six-year approval, from the Western Association of Schools and Colleges (WASC).[10]

Both in their interactions with one another and their commentaries to us, South's teachers portray a teacher culture in which social and political commitments to teaching are prominent. For many teachers, especially but not exclusively in the humanities, issues of social justice and equity form cornerstones of the curriculum. Several see this school as affording them an opportunity to teach in ways that might be constrained or disapproved elsewhere; some also believe that traditional teachers would have no interest in teaching at this school. There is relatively little turnover here.

Reform context

South High School has a strong local reputation for its restructuring efforts and the strength of professional community among staff. The school has been a long-time member of the Coalition of Essential Schools, was one of 42 high schools funded by California's School Restructuring Demonstration Program, and is now one of approximately 20 Bay Area high schools designated as a "leadership school" by the Bay Area School Reform Collaborative (funded by Annenberg and Hewlett).

The succession of restructuring efforts has presented rather different demands and opportunities for the school. Membership in the Coalition during the early days of restructuring oriented the staff to a set of principles that remain part of their terminology

[10] The WASC accreditation system shifted in the mid-1990s from a focus on resources and program at the department level to a school-wide focus on teaching and learning. Evidence of student work is a central component of the WASC materials available to the review team.

and their rationales for curricular and programmatic choices. Teachers and administrators (current and former principal) describe the Coalition's professional development opportunities—the various Fellowship programs, national conferences, summer institutes, the National School Reform Faculty—as having been pivotal in building capacity and momentum. The Coalition supplied compelling but broad ideas, together with opportunities to develop them in the company of other like-minded educators. For most of the past decade, however, the Coalition placed few demands on schools to demonstrate progress, although questions about the depth and breadth of change were publicized in a small number of case studies (Muncey & McQuillan, 1993, 1996). South has retained its membership in the Coalition over time, as that organization decentralized its operations (with a very active presence in the Bay Area), added a local school coaching strategy, and began to develop expectations that schools grapple with evidence of impact.

It was through its involvement with the state-sponsored School Restructuring Demonstration Program (popularly termed "SB 1274" after the number attached to founding legislation) that the school first encountered specific expectations for external accountability linked to reform, together with resources and tools targeted to the school-wide analysis of student work and other performance data. The restructuring initiative aspired to "powerful teaching and learning for all students" (California State Department of Education, 1991). Toward that end, schools were granted supplemental resources and urged to reinvent themselves in all respects—from school-level governance arrangements to staff re-organization and innovations in curriculum, instruction, and assessment. Prominent on the reform agenda were new professional leadership roles for teachers.

South's conception of restructuring was strongly influenced by its Coalition ties—a "less is more" stance toward curriculum, the use of exhibitions as vehicles for student assessment, an advisory system to promote personalization. Like many of the restructuring high schools (three-fourths of the restructuring plans), South pursued interdisciplinary curricula and projects; unlike most others, it concentrated its resources on innovations within and across existing academic subjects and did not develop a school-to-work component (although students do complete community service requirements). Once a year, each school prepared a progress report to the state; the narrative reports were bound together and circulated to all funded schools, and also formed the basis for sessions at a state-wide "Symposium" at which school teams served as "critical friends" for one another.

The Annenberg/Hewlett (BASRC) grant, which succeeded the SB 1274 restructuring grant expands locally available support for whole school change but also ratchets up the expectations for accountability. Schools must prepare an annual Report of Progress that is rated against a rubric by a team of reviewers, with funding contingent on a favorable rating. Although BASRC remains philosophically supportive of multiple measures of progress, South's leadership team reports that performance on the state standardized assessment (SAT-9) dominated the most recent review of progress in ways the school had not anticipated. Meanwhile, district officials have devoted more attention to the alignment of district and state standards; according to school leaders, the school has been granted the latitude to pursue its own restructuring ideas as long as standardized test scores do not decline.

All in all, South has experienced a relatively long period of extra-mural supports for restructuring efforts that have been largely of its own design and under its own control. In the current climate, it is also experiencing heightened expectations for external accountability that come both from the state and from its principal private funding source.

Impetus for learning at South

Expectations for teaching and the impetus for teacher learning at South appear to arise mainly from three sources:[11]

- A shared sense of the school's restructuring history and corresponding expectations that the school will be home to innovative teachers who work together to produce an innovative, integrated curriculum. Teachers speak of being part of an "amazing" staff in which the professional expectations are high.

- A school-wide focus on understanding and preventing student failure. The teachers who planned the annual fall retreat organized it to illuminate and work on this issue: the school's aggregate test scores have risen in recent years, but the aggregate test score profile masks a sizable group of students who earned 3 or more Fs in their academic coursework in 1998-99. The staff has now taken "student failure" as the organizing problem for its own professional development and inquiry into teaching practice.

- The widely shared expectation that school improvement entails a close look at teaching practice and teaching relationships. The school negotiated an agreement to substitute peer observation and commentary for conventional evaluation of tenured teachers; it organized and funds teacher participation in NSRF groups; it uses its Wednesday minimum days in part to demonstrate lessons and examine student work. Data on student performance and review of student work collected in part as a requirement of funded restructuring programs and state requirements add new urgency to this part of the school's work.

Supports for learning

The first major support comes in the form of staff conceptions of what teaching and reform entail. School leaders—both administrators and teachers—see reform progress as centrally a problem of professional values, beliefs, knowledge and learning. The principal and teacher leaders all act as "culture bearers" in important and visible ways. They are also aware of how difficult it is to introduce and sustain a focus on teaching practice, and they organize time and other resources to sustain that focus.

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[11] We want to emphasize that we have not completed a full round of teacher interviews in this site, and that many of our observations capture the more "public" interactions among teachers that take place in staff meetings or department meetings.

Compared with other high schools —even other restructuring high schools—South appears to support a large range and variety of professional learning opportunities.[12]

- The volume of competitive extra-mural funding flowing to South translates into time and money to support teacher learning; combined with the waiver agreement that establishes a weekly two-hour meeting block, these supplemental dollars constitute a crucially important and generally flexible resource for the school.

- The two-day retreat establishes the year's priorities, sets the tone for discourse, introduces newcomers into the culture, and affords the staff the chance to "bond" (as they put it) and to concentrate on tough issues without the distractions of the daily work. In Fall, 1999, the retreat began with a collective look at the agreed-upon norms for staff interaction. Among the other activities were: a fishbowl discussion among the "elders" about the restructuring history of the school; an exercise to sum up what the staff had done and what they had learned the previous year as a group and as individuals; a Socratic seminar on the issue of high expectations for all students; and staff discussions of teacher-generated and student-generated explanations for student failure.

- A Wednesday "minimum day" schedule supplies a two-hour block of time for teachers to meet. Each Wednesday begins as a whole-staff gathering with approximately 10 minutes divided between "celebrations" and "timely announcements" (those that can't wait for the bulletin). The remainder of the time is devoted either to whole-staff work on a project of common interest (for example, clarifying what is meant by a portfolio in different classrooms or departments) or in smaller groups, primarily departments and WASC focus groups.

- NSRF Groups. Modeled on the Coalition's National School Reform Faculty, the school has organized three NSRF groups to provide a home for discussions of teaching. Groups meet monthly, and their members, in pairs, agree to conduct monthly peer observations. The groups vary somewhat in the work they take up together. The meetings we observed included work on teacher portfolios, the use of structured protocols to discuss student work and implications for teaching, and a discussion of the book The Courage to Teach.

- Peer observation pairs. When it restructured in the early 1990s, the school negotiated a waiver from the state's legislated approach to teacher evaluation. Every teacher in the school is required to participate in a minimum number of peer observations each year and to arrange for students to complete end-of-course evaluations of the semester's course teaching. As the principal explains for the benefit of newcomers, however, "Teachers are not evaluating each other.

[12] Because this year was an accreditation year, we cannot speak with confidence about the distribution of time devoted to teaching practice and other purposes or topics.

The goal is to get better at what we do." (Untenured teachers also receive principal observations and evaluation reports).

- Summer institutes and other team-based efforts focus on selected aspects of reform. Participation in the Strategic Literacy Initiative engaged a team of teachers from the school with teams from other schools in examining new approaches to literacy teaching in the high school. Summer institutes sponsored by BASRC and another funder, High Performance Learning Communities (HPLC) afford teachers an opportunity to work more closely with data on student performance and on other issues of school-wide interest.

- Finally, teachers report high levels of support for their individual professional growth interests, including material support and/or encouragement to participate in conferences take courses, and pursue grants or fellowships. This is an information-rich environment in which teachers learn about opportunities from school leaders, from one another, and from their various connections outside the school. The annual Asilomar conference of English teachers, the AutoDesk conference on project-based learning, the Coalition's Fall Forum and other conferences attracted teacher attendance. During Summer 2000, one teacher will use a Fulbright award to travel to South Africa; another will work on web technology through a grant to work with Compaq. Altogether, this is a climate of intellectual expectation.

Constraints on learning

Although South's leadership and staff take professional development seriously, we also detected certain constraints on teacher learning that arise both from the choices made by the school and from external conditions.

First, the focus on whole-school change efforts appears to be in some tension with efforts focused more closely on improvements in subject teaching. This tension is evident first in the allocation of in-school professional development and planning time. A substantially greater proportion of time during 1999-2000 was devoted to school-wide initiatives (such as the use of portfolios) than to dilemmas of teaching and learning raised by individual teachers or departments. Yet teachers spoke most favorably of the times when they had the opportunity to examine teaching practices tightly linked to their own teaching responsibilities (for example, the time spent reviewing students' use of evidence in expository essays and considering how the use of evidence was being taught in the different grade levels and classrooms). The NSRF groups and the peer observation arrangements are intended to afford other opportunities for reflection on teaching, and teachers speak favorably of both; however, these arrangements are interdisciplinary by design and thus afford only partial opportunity for teachers to examine their curricular and instructional choices and effects with others who share their subject teaching responsibilities or background.

The tension between whole-school activities and those devoted to subject-specific teaching improvement is also evident in the nature of the school's investment in external activities and partnerships. For the most part, these activities and partnerships focus on processes of whole-school change (week-long summer leadership institutes organized by BASRC or HPLC). We observed no external ties related to mathematics, while activities and partnerships related to literacy were in flux. For two years prior to our data collection, the school had participated in the Strategic Literacy Initiative. In Fall 1999, the school wished to alter the team membership to reflect a reading-across-the-curriculum emphasis, with voluntary participants representing each of the school's departments. As this plan would entail shifting team and network membership mid-way through a sequence of work, SLI requested that the school maintain its existing team; in the end, the school elected to discontinue its participation in SLI. Two of the SLI participants became involved in a district program also focused on literacy and geared toward preparing them as literacy resource teachers for the school, but there were no formal activities related to literacy during this school year.

A second constraint arises from the rapidly multiplying external demands related to standards, testing, and accountability. A large share of teachers' time during this year was taken up with preparations for WASC accreditation, especially in the first five months of the year. The BASRC Report of Progress ate up more teacher and administrator time and added stress. Some teachers credit this exercise with pushing their thinking and focusing their activity by forcing attention to evidence of progress, but the costs also remain substantial. The district's requirement that teachers "align" the school standards and course outcomes with district and state standards translated into time filling out forms; time for discussing the meaning of a particular standard, or what it might entail to teach to a standard, was correspondingly reduced.

East High School: Within-school learning communities, departmental innovation, and department ties to external subject networks or projects

Our central interest in East High School rests with the opportunity to investigate issues of professional community within and across subject departments. The English department has cultivated strong collaborative practices within grade level teams and has also developed strong ties to a local professional development provider (Strategic Literacy Initiative, formerly the HERALD Project) and ties of varying strength to faculty at three colleges or universities. The math department includes a core group of teachers working on de-tracking Algebra in the 9th grade. This group met for a five-day intensive session in the summer and meets weekly during the school year; it thus offers an unusually "public," consistent, and concentrated opportunity to trace the evolution of teacher thinking and practice in an area of considerable policy interest—mathematics course-taking and achievement in the high school. The department maintains an active involvement in a reform-oriented community of math educators outside the school.

Reform context

East High School came to our attention on the basis of its professionally active and well-regarded English and math departments (the science department is also home to a number of innovators and is a strong presence in the school, but was not a focus of our site selection and data collection). Although the staff has discussed the possibility of introducing school-to-career "pathways" during the past three years, the staff recently concluded that it was not sufficiently committed to such changes to mount them school-wide. At the same time, both the English and mathematics departments have launched curriculum experiments explicitly aimed at improving overall student performance in these core academic areas. Professional development in these departments joins a focus on academic learning with a push for equity and social justice.

In effect, East is situated in relation to two very different streams of reform. First, teachers in math and English have prior attachments and commitments associated with reforms in their academic subject areas. In particular, individual math teachers have been active promoters of the NCTM standards and see themselves as pursuing a social justice agenda. At the same time, teachers are immersed in a context of escalating district and state pressures tied to state standards and high-stakes testing that some see as regressive and punitive.

Impetus for learning

The central impetus for teacher learning at East resides in an ambitious conception of teaching and teacher leadership cultivated among teachers themselves, together with teachers' widely expressed appreciation for the working-class, ethnically diverse students they teach. Within the school, and especially at the department level, professional learning is most visibly driven and organized by collective experiments with curriculum.

English. In the English department, teachers' participation in projects of the Strategic Literacy Initiative led to the development of a new "academic literacy" course in the 9th grade. The course was designed to introduce students to meta-cognitive strategies that they could use to approach the reading of unfamiliar texts both in English and in other subject areas (particularly science and history). In their initial preparations for the course, during spring 1999, the teachers consulted with teachers in other departments about the kinds of texts students were expected to read and the kinds of literacy demands embodied in those texts. The department chair remarked, "It was eye opening to learn what goes on in other disciplines. It was invaluable for me as a teacher." A team of five teachers further planned the course during the summer of 1999, although specific curriculum units were still in development as the semester unfolded. The team met weekly after school throughout the fall semester to coordinate curriculum and, occasionally, to reflect on student response and their own instructional experience.

When the team members reported on their experiment in March, 2000, following a full-day retreat at which they reviewed their experience and what they had learned from

it, the audience included other department colleagues, an administrator, a counselor, the school librarian, and teachers from science, history, math, ESL, and special education. On that occasion, the team members prefaced their presentation by explaining that the new course had pursued twin goals: goals for student literacy learning ("engage students as readers; introduce metacognitive strategies, recognize the dynamic nature of texts and reading"), and goals for teacher learning ("create a learning community among ourselves as teachers"). Expanding on the latter point, one teacher explained:

> We wanted to take a stance of inquiry and learn from our work and do our work by asking questions about what our roles were as teachers. We have gone through this process by questioning ourselves. We have had some concentrated time to think about our work, but we are still in that process. This is a snapshot of where we are. We wanted to welcome you into this process with us and fill you in, and that's what we're here to do today. We're in the middle of a work in progress.

To acquaint others with their course experiment more fully, the team members summarized the concepts they had learned through their participation in the Strategic Literacy network, and showed specific examples of how those concepts manifested themselves in curriculum choices they had made. For example, teachers explained that students tend to think that "they don't know anything," but an exercise titled "Give One Get One" was designed to permit students to identify and pool their background knowledge before attacking a text. "At first they think they don't know anything but then when we pull everything together, they see we're pretty prepared to read the text." The team went on to share "some tensions we identified and some things we need to resolve." One tension was the trade-off between class time spent on reading and time spent developing facility with writing; another was the press during team meetings to "get things done" with new curriculum development and the need that some teachers felt to reflect more fully on how the experiment was going.

Math. The math department demonstrates conditions that Gutierrez (1996) would term "organized for advancement," its members committed to expanding students access to upper levels of high school mathematics. Because of the gate-keeping function attributed to math course-taking in the high school, their most concerted effort for equity and achievement focuses on the first year Algebra course, which they have recently de-tracked. The question organizing the teachers' current work is: *How do we create algebra classrooms that support the success of all students?*

The teachers' de-tracking project has created a need for inquiry, to which the group members bring substantial resources and collective expertise. In addition to their current work in de-tracking Algebra, they have a history of success in de-tracking the eighth grade math classes that many of them used to teach when East was an 8 – 12 grade school. From this experience, they derived an image of successful heterogeneous classrooms and a set of principles that inform their current work (see Figure 4). They have participated in the development of the College Preparatory Mathematics series, have received extensive training in the Integrated Mathematics Project (IMP), regularly attend workshops on new technologies for the mathematics classroom with Key Curriculum Press, and have worked with assessment projects like New Standards Portfolio Project.

East's math department is a preferred placement site for student teachers from both Stanford and Mills College because of its demonstrated successes in teaching traditionally underrepresented students.

Figure 4. Student and teacher learning principles in the East High School Math Department

The student learning principles

1. Research-based strategies that address social and status issues among students to support participation and learning in collaborative groups, derived principally from the Complex Instruction program at Stanford.

2. Working from the premise that all students are capable:

   Challenging a linear view of math learning — e.g., accepting that students *can* learn algebra before they have mastered fractions; students can fill in many of the gaps in their mathematical skills while learning higher math— instead of falling into a traditional model that insists on "remediation" before providing access to higher math.
   Using an "outside-in" approach to teaching math — that is, working from big ideas to help students develop a coherent understanding of concepts, as opposed to the atomic subdividing and sequencing that dominates traditional classrooms;
   Representing mathematical knowledge as something to be viewed critically, open to questioning and discussion;
   Assessing students in ways that respect learning over time.

The teacher planning principles

1. A collaborative approach to planning curriculum;
2. Seeking worthwhile problems and projects to help highlight key mathematical ideas;
3. Sharing resources and training in new technologies and activities to create distributed expertise;
4. Sharing challenges of designing and implementing curriculum and assessments;
5. Respecting the complexity of the undertaking and understanding that teachers must also learn over time;
6. Collaboration with outside partners (e.g., university faculty, student-teachers and their mentors, curriculum developers).

In addition to their experience and knowledge as teachers, the Algebra Group has two structures in place to support their inquiry. The first is the annual Algebra Week, a time for reflecting, training, and planning that takes place before the start of school in August. The second structure is the weekly Algebra Meeting, during which teachers discuss issues that arise as they try to teach and implement curriculum in their classrooms. In the absence of extra-mural funding, the teachers donate their time for both.

In addition to the staff's internal motivations for professional development—those arising from the teachers' commitments to their students and their interests in curricular innovations—external pressures a factor for some teachers. A member of the academic literacy team acknowledged to colleagues in other departments that "the impetus for beginning this conversation was trying to figure out what our school could try to do to respond to what the state is asking us to do. Our scores are lowest in language arts and reading, and in anticipation of the conversation being held district wide—and should be school wide—we wanted something of our own creation, so when the heavy hand started coming down, we would have something of our own creation that we believed in."

Supports for teacher learning

The two principal supports for teacher learning at East are a staff ethos conducive to professional development and a tradition of relative departmental autonomy.[13] These supports are most visible at certain structured "collaboration points" within and across departments: the departmental discussions of student work and writing instruction in English; the grade level teams and academic literacy group in English; the algebra group in math; the 9th and 10th grade cross-department groups, and a group of teachers working on to consider possibilities for 11th and 12th grade career pathways. It is within these smaller groupings that we have begun to discern focus and continuity in teachers' development linked to reform interests.

Within these collaboration points, high levels of interdependence among teachers and high expectations for teacher leadership help to sustain the focus and continuity. Teachers must rely on each other to accomplish their collective aims, especially when they are committed to teaching the same curriculum, giving common assignments, and employing certain instructional strategies.

Such focus and continuity receive added support from departmental controls over hiring and from arrangements for the support of new teachers. Although the district participates in the state Beginning Teacher Support and Assessment Program (BTSA), it is the school-level mentoring and other supports that teachers describe as central to their success. These arrangements are particularly well developed in the math department. Figure 5 displays a teacher recruitment flyer distributed by the math department during Spring 1999; our observations and our interviews with two new hires indicate that the

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[13] Of course, the tradition of departmental autonomy can work in ways that have quite variable influence on teachers' performance and commitment or on the department's collective capacity and orientation. At East, English and Math both represent relatively strong departments with a collective orientation toward improvement and an ethic of shared responsibility for student success. The history/social studies department in the same school displays far less of a collective presence, although it is home to some innovative and reform-oriented individuals. For more on variations in the type of professional community afforded by subject departments, and the implications for high school reform, see Little (1999) and Siskin & Little (1995).

Figure 5: A teacher recruitment announcement for East High School's math department (excerpt)

There are several advantages we can provide for strong candidates:

• We never just shut the door and let a new teacher sink or swim. Each new department member will be paired with a strong experienced teacher who observes daily, gives regular feedback, and provides curricular and pedagogical support.

• Our master schedule will be set up so that new teachers can observe another section of the course they are teaching. This gives them an opportunity to see a lesson plan in action before they actually have to teach it themselves.

• East High is on a block schedule, so we each teach three 90-minute classes per semester. We only assign ourselves two different courses. Next year we will be implementing a heterogeneous Algebra 1 course staffed at 20-to-1. Nearly every department member will be teaching this course as well as a more advanced course. Our intention is to give every dept. member an equitable, balanced schedule that promotes on-going teacher learning. A typical schedule would be, for instance, Algebra 1 and Geometry.

• All teachers of each course meet weekly to collaborate on lesson plans, discuss student progress, and share ideas. We believe this tremendous level of collaboration is one of the things that makes our department unique, and we think the chance to participate in these conversations is an invaluable opportunity for any teacher (beginning or otherwise).

• The curriculum we use is our own adaptation of College Prep Math (CPM). We have worked for years to make sense of group work, open-ended questioning, the effective use of manipulatives and sophisticated use of technology. In Algebra, for example, we use Algebra LabGear extensively, and in Geometry we are incorporating Geometer's SketchPad.

We are looking for strong candidates who have:

—>a strong interest in group work,

—> a commitment to the idea that every student is smart and can be successful with rigorous mathematics, and

—> a commitment to collaboration.

Interested candidates should call [names and phone numbers of department co-chairs] as soon as possible. We would love to have you come visit our classrooms, watch our students work together, and meet the department.

promises and descriptions portrayed in the flyer are fully consistent with department practice.

Finally, the departments' external ties to colleges and universities, special programs, and professional networks outside the school constitute strong resources for curricular innovation and instructional improvement. Both the math and English departments have well-established ties to pre-service teacher education programs, and have been approached recently with a plan to become a professional development school site. Both departments have adapted curricular innovations first developed elsewhere as an important platform for their own work. In math, teachers have adapted the CPM math program by incorporating new technology and some features of the Interactive Math Program. In English, teachers adapted the Academic Literacy course first developed by the Strategic Literacy Initiative. The department chair in English retains strong links to a teacher research group, while the math co-chairs are well-connected to reform-oriented math educators at the regional, state, and national levels.

Constraints on teacher learning

The major constraint on teacher learning at East is the scarcity of time and material resources allocated directly to professional development. Unlike South, East has little in the way of supplemental, extra-mural funding; further, the basic state allocation of professional development, once permitting up to eight full days during the school year, has been drastically curtailed. East's two officially designated staff development days—one in November and one in March—suffered a familiar fate: teachers were asked to tackle large questions in a short time in a format that afforded little interaction, and to take up different topics on each of the days. Scheduled "Common Planning Time" (CPT, half-day blocks scheduled several times a year) might in principle afford a mechanism for sustaining a school-wide professional development agenda across the year, especially in combination with the two full days allotted to staff development, but teachers report that the agendas for those days are set at the last minute by administrators. "Common planning," they say, is a misnomer. Monthly faculty meetings have been devoted largely to administrative matters, although the school's new principal maintains that next year may bring a new emphasis on staff development.

Perhaps because supplemental funds are scarce, teachers may receive little information about professional development opportunities. (The math department, which arranges for its members to attend conferences together and to learn about a range of opportunities, may be something of an exception, and even that department has had a difficult time securing resources to fund substantial investments of out-of-school planning and teacher development time.) One relatively new teacher, asked about whether she had attended one of the major subject matter conferences in the region, observed that the school employs few avenues for informing teachers about such opportunities:

> It's just a complete lack of knowledge .... I'm teaching and these things come up and I personally didn't even realize it was happening until really late and the sad thing is that I didn't even find out through my department. ... And as a new teacher, I don't know as many things that are going on.

She is also uncertain whether she would receive encouragement or resources from school administrators for participating in such opportunities:

> But-- and I don't feel like there's a tremendous amount of support to go to these things. To have them paid for. ..no one's really encouraging anyone to do anything. ... I just personally can't go in there and ask.

Other constraints on learning correspond to the resources described above—in effect, they are the flip side of the learning supports we have identified.

- For many staff, an ambitious conception of teaching corresponds to an ambitious conception of instructional improvement or teacher development. For example, during the two department meetings convened by the English department during September, teachers laid out a year-long agenda that entailed large-scale changes in curriculum at the 9th and 10th grades; a department-wide effort to improvement the quality and effectiveness of grammar teaching and writing instruction; negotiations for a possible Professional Development School arrangement; commitments to student teachers; collaboration with faculty at the community college with regard to student writing; and a peer observation scheme.

- Leadership roles within our target departments, math and English, are invested with high expectations and a sense of possibility, but teachers are also asked to take on these roles and expectations very early in their career. In the English department, the department chair is in his 4th year of teaching and only two other teachers bring more than 5 years of experience. The math department employs a co-chair arrangement. One co-chair has been teaching for 10 years and enjoys widespread respect for his teaching accomplishments; his co-chair described her response this way when she was asked to share in the leadership responsibilities:

  > When I was asked to take on this role I felt like...first of all, I'm very new to [the school] and the community there. And so I don't have a history that even provides me with a structure for that information. And that there are internal and external expectations that come with it. And the idea that how am I going to possibly know everything that I need to know, do everything I need to do, take this group of people that has a history of doing incredible things in the math world- how am I going to do that? I mean that's not me. I can't. ... there are certain things I'm very comfortable with but given that [my co-chair] is my role model now, and that he's been there for ten years, and I've been there for two, and I've only been teaching for five years...the pressure I feel to live up to what I assume to be people's expectations is huge, absolutely huge.

- Teacher development and instructional improvement —like much else in the school—rests heavily on a spirit of staff volunteerism. Teachers convey a combined sense of pride and overload. Staff enthusiasms for various curriculum innovations or new team arrangements supply a recipe for excitement and challenge—but also for fatigue, disappointment, and burnout. By February, this teacher has decided to re-focus energy on the classroom for the upcoming year:

  > I've recently felt---and basically decided--- that I'm going to try to cut out as much as I can that isn't directly related to my own teaching, because I literally don't have time to read the books as well as I need to or the poetry and that is really, the content of the course itself is really what I'm about and that's what makes me stimulated. And if I don't have that, then I don't, I just feel very frustrated.

  Another teacher explained that she always sought a combination of classroom work and larger, school-level projects, but also felt the need for pacing:

  > It's almost like this ebb and flow. You sort of put yourself out there and then you retreat a little, and then you put yourself out there and you retreat a little. And I've been putting myself out there and now I can feel myself retreating. ...

- High levels of interdependence, while presenting teachers with support from colleagues, also introduce certain tensions. The Academic Literacy and Algebra groups must reconcile individual interests, priorities, and preferred ways of working with their collective commitments regarding curriculum. The curriculum focus and the interdependence (doing new curriculum together, and needing each other to do it) produces a "get it done" (task) mode that may make inquiry or reflection difficult. Curriculum experimentation—at least when done as a group—has high transaction costs and potential for unanticipated conflict.

- Finally, the expanded agenda related to standards and testing has resulted in competing demands on teacher time. Over the course of the school year, the school and district administration commanded more of teachers' time, energy, and attention to respond to external demands, especially those related to test scores. Even by November, the effect was evident in the agenda for the monthly English department meetings. In part because of the new external demands, and in part because of the department's own large agenda, teachers found it hard to sustain continuity. In late September, teachers began examining samples of student writing and discussing their instructional practices. They continued in October, generating an agreement that everyone would independently provide feedback on the same writing sample before the next meeting. However, that agreement seems to have evaporated before the November meeting, the first of many taken up in large part by discussion of testing issues.

Teacher learning and resources beyond the school

Our two sites vary not only in the ways that teacher learning is internally organized and supported, but also in the ways in which the school, its departments, and its teachers are connected to external opportunities and resources. Figure 6 summarizes the nature of external links for each school. At South, the school enjoys long-standing relationships with major whole-school change organizations, but less well-developed or enduring ties with subject-related organizations or networks. At East, departments and some teachers have forged strong ties with external subject-related organizations or opportunities (including programs of teacher education), but the school remains relatively isolated from organizations focused on whole-school change. In neither site does the district loom large in teachers' descriptions of valued resources and supports for professional learning (with the possible exception of the sabbaticals offered to teachers at South), but we have only begun our interviews with district officials, and thus are unable to say how the district is positioning itself in that regard. In both districts, implementation of standards is a major focus.

Professional development and accountability in the context of reform

We have undertaken this project at a time when the rhetoric of accountability fills the air. In both of these schools, teachers and administrators grant attention to external requirements and audiences in ways that we simply did not see in the earlier round of voluntary restructuring initiatives. Further, both of these schools display well-developed mechanisms of internal accountability.

The relationship between internal and external accountability forces and mechanisms remains unclear at this point. Both schools have well-developed internal mechanisms of accountability, but in neither case did the schools develop their internal forms of accountability as a direct result of external pressures and policies. At South, the school-wide norms of mutual accountability and mutual support date back to the school's earliest period of restructuring a decade ago, and the school has maintained a steadfast focus on multiple measures of student performance even with (or perhaps as a response to) the present fixation with standardized test scores. Teachers employ joint reviews of student work, common assessments, demonstration teaching, student evaluations of courses, and peer observation among their means of keeping themselves accountable to one another and to students. At East, internal accountability mechanisms have grown out of departmental agreements regarding curriculum priorities and student learning goals. Although this history makes for some variation from department to department, the math and English departments both employ common end-of course examinations or projects, spend time examining student work, devote special attention to the support of beginning teachers, and make efforts to incorporate peer observation into their departmental practices.

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Figure 6. Links with External Professional Development Resources at Two High Schools

Links	South High School	East High School
Whole-School Reform	*Extensive external ties* BAYCES, BASRC, HPLC (reform organizations)	*Minimal external ties* Selected inquiries into school-to-career options
Math	*Minimal external ties* Individual participation in Eisenhower-funded workshops *Note: individual inventories incomplete at this school*	*Extensive external ties* Algebra Week (invited participants from: Stanford's Complex Instruction Project; author of innovative text; teachers from other schools known for equity orientation) Ties with influential individuals in math reform community Bay Area Math Project (prior to 199X) California Math Council, Asilomar conference (whole department) Complex Instruction Training (199X) Student teachers, links with pre-service programs (considering PDS status) Beginning Teacher Support & Assessment Project (2 teachers, district program with state funding)
English/ Literacy	*Moderate external ties* Strategic Literacy Initiative (1997-1999) District literacy training (2 participants, to serve as internal resources) CSC/CATE Asilomar Conference (3) Various individual activities (National Endowment for the Humanities, Fulbright, coursework)	*Moderate external ties* Strategic Literacy Initiative (1997-1999) BAWP (individual, none this year) CSC/CATE Asilomar Conference (2) Teacher research group (1) Student teachers, links with preservice programs (considering PDS status)

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The very existence of these internal provisions for mutual accountability and mutual support positions the schools to take a dynamic rather than passive role in response to new external demands.[14] At East, the state's adoption of the SAT-9 as the single measure of school performance, together with the state's proposal to introduce a high school exit examination, have stimulated heated controversy among the staff, as well as between testing opponents and administrators at both the school and district level; the testing opponents, several of them concentrated in the math department, have taken steps to inform themselves about the uses and abuses of standardized tests while also emphasizing how alternative measures might be used to demonstrate student achievement to parents, district officials, and other public stakeholders. At South, the school has tended to comply with external requests with less apparent controversy; the school's restructuring history, and its partnerships with various reform organizations, has positioned it to respond relatively easily to district requests for samples of student work and assessments tied to academic standards in each course. At the same time, however, the staff is cognizant of the potential threat posed by the current initiatives to its own conception of student assessment based in multiple performance measures. School leaders have negotiated agreements with district officials that permit the school to continue with its own assessment measures, but the school's students also take the SAT-9. It remains to be seen what the school's response would be if SAT-9 scores decline, especially if the test results appear to be in conflict with assessments linked more specifically to the school's curriculum and agreed-upon course outcomes.

Teachers at East have been more overtly, publicly divided over the merits of the present standards and testing policies than the staff at South.[15] However, by virtue of their prior reform histories, their strong professional communities, and their past participation in professional development in areas of curriculum and assessment, both of these schools possess the capacity to interpret the current standards and testing policies from an informed position. That is, it would be short-sighted to see professional development simply as equipping teachers to implement reforms generated by others; rather, the record of professional development and reform effort in these schools has

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[14] On this distinction, see Bowe, Ball, & Gold's (1992) analysis of responses to Britain's 1988 National Curriculum on the part of academic departments in secondary schools. For a discussion of internal and external accountability in the context of state standards and accountability in the U.S., see Siskin and Lemons (2000).

[15] Although it is premature to posit definitive explanations for this difference, we note that South staff take steps to preserve a "sense of the whole"—professional community associated with whole-staff unity and school-wide commitment to reform goals—while the locus of professional community and reform activity at East is much more rooted in smaller groups of teachers, including groups linked to particular departments.

created a broader kind of capacity—not only the knowledge and skill adequate to implement reform, but also the capacity to invent solutions to persistent problems and to interpret and evaluate the solutions devised by others.

Figure 7 portrays the characteristic types of professional development, how teacher learning is supported or constrained, and internal and external mechanisms of accountability in each of the three reform configurations taken up by this study.

Figure 7. Three Configurations of Professional Development, Accountability, and School Reform

	Configuration 1 **Restructuring High Schools** **(State Demonstration Project)**	Configuration 2 **South High School** **(Local Reform Network)**	Configuration 3 **East High School** **(Within-School Innovation)**
Reform Context	Locally initiated whole-school restructuring supported by state demonstration project	Whole-school change within local Annenberg reform network; escalating influence of state standards & testing	Within-school change centered in innovative departments; escalating influence of state standards & testing
Impetus for teacher learning	Knowledge and learning demands implicit in restructuring plans	Organizing question or problem related to student failure School-wide expectation for looking at teaching practice ("cycle of inquiry") Expected supports for new teachers	Ideas for curriculum and teaching innovations within departments (de-tracking Algebra; developing an Academic Literacy course; other) Proposals for school-wide program development (career pathways)
Characteristic scenario(s)	Hacienda HS summer institute on project-based learning or portfolio assessment (Across schools, pattern of using whole-staff activity to rally support for restructuring goals and strategies, but leaving implementation up to individual teachers and largely ignoring department-level resources or obstacles.)	Two-day staff retreat; weekly Wednesday meetings (minimum days); NSRF groups (Scenario would illustrate the climate of mutual respect and support , the expectation for inquiring into student performance and teaching practice, and the school-wide focus on prevention of student failure.)	Algebra Week or Academic Literacy meetings (Scenario would illustrate the opportunities for professional growth through intense, ongoing interaction among teachers who share responsibility for the same subject and/or students.)

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Figure 7, continued

	Restructuring High Schools (State Demonstration Project)	South High School (Local Reform Network)	East High School (Within-School Innovation)
Supports for learning	Additional state funding with high flexibility Explicit focus on change and encouragement to participate in professional development New provisions for common teacher time	Explicit focus on change and encouragement to participate in professional development; ethic of professionalism. Learning-oriented leadership. PD-oriented leadership council; principal works to find discretionary PD resources; principal sees reform as problem of professional learning. Supplemental private funding with high flexibility Constellation of professional development opportunities: weekly minimum day (2 hour block) focused on inquiry; planned by leadership team on quarterly basis. Department goals linked to school improvement goals NSRF groups (monthly) Outside ties: CES; BASRC; HPLC; prior SLI participation	Tradition of strong departments and strong improvement-oriented department leadership Departmental controls over hiring Relative autonomy for innovation at the department level Some ties to external resources through partnership with teacher education programs (English, math), special programs (Strategic Literacy Initiative), other organizations and groups (WestEd; math reform groups; environmental science project, etc.) Ethic of "professionalism" among teaching staff

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Figure 7, continued

	Restructuring High Schools (State Demonstration Project)	**South High School (Local Reform Network)**	**East High School (Within-School Innovation)**
Math PD inventory	Varied widely by department. North Meadow math department active in reform-oriented math PD and curriculum innovation, especially IMP and CPM; Hacienda a traditional department with little or no PD involvement related to subject area (though active in other school-wide reform activity).	(incomplete) Department meetings approximately monthly; not seen as affording time to discuss teaching ideas and practice. Math teacher participation in NSRF groups	Algebra Week (summer) Weekly Algebra Group meetings Ties with influential individuals BAMP (pre-1999) Asilomar (whole department) Complex Instruction (Stanford program) Student teachers, links with teacher education programs
English PD inventory	Varied widely by department. North Meadow math department active in reform-oriented math PD and curriculum innovation; Hacienda a traditional department with little or no PD involvement related to subject area (though active in other school-wide reform activity).	Department meetings focused on student work and teaching practice SLI (to Spring 1999) District literacy training (2 teachers) Asilomar Conference (3 teachers) Various individual activities (e.g., National Endowment for the Humanities; Fulbright institutes, coursework, etc.)	Department meetings include discussion of student work & teaching practice, but very full agendas. SLI (to Summer 1999) BAWP (individual, no evidence this year) Asilomar Conference (3 teachers) Teacher research group (1 teacher) Preservice programs/student teachers Coursework

Figure 7, continued

	Restructuring High Schools (State Demonstration Project)	South High School (Local Reform Network)	East High School (Within-School Innovation)
Constraints on teacher learning	Reform seen mainly as implementation task; learning demands under-examined Large reform agenda resulted in fragmented PD agenda	High demands on teacher time placed by reform activity Subject-specific resources less evident	Limited teacher and department access to release time or summer support for professional development Designated staff development days planned a year in advance Relatively minimal PD time built into school calendar. Whole-school PD and CPT agendas permit little continuity or follow-up on main goals held by teachers.
District role in professional development	Varied by site; mostly inconsequential for professional development in the high schools	(Incomplete)	(Incomplete)
Accountability mechanisms (external)	Annual reporting to state, California Center for School Restructuring, and other schools (no formal sanctions)	Annual Report of Progress rated by review team as basis for funding; student achievement measures given increasing weight	Increased district and state focus on test scores
Accountability mechanisms (internal)	Varied by schools; mostly weak	School review of student performance School norms for discussion of data Cycle of inquiry at school and department level Peer observation (expected)	Within-department norms (English, math) Departmental course finals Administrator focus on test results 9th and 10th grade teacher groups

Conclusion

This report offers a preliminary summary of case study research begun during the second year of a three-year study of teacher learning in the context of high school reform. The study acknowledges the long-standing criticisms of secondary schooling and seeks to investigate conditions that would result in a better fit between school reform demands and professional development resources.

Yet this study is not a study of particular reforms or reform implementation — even in this period dominated by state standards, high stakes testing, and external accountability levers. Most broadly, the study takes its departure from an interest in the quality of secondary school teaching and conditions of teachers' work in high schools. Its first aim is to contribute to the quality of secondary school teaching by specifying how organizational and occupational structures, processes, values, and norms relate to secondary teachers' practice and professional development.

Elsewhere, Little (2000) has questioned the propensity of contemporary research to focus so nearly exclusively on reform initiatives and to portray teachers as reform workers:

> Research on schools and schooling, on teachers and teaching, increasingly centers on "reform" and "whole-school change." … In effect, contemporary scholarship has to a great extent decoupled research on reform from research on teaching. The preoccupation with research on reform and reform environments comes at a cost. There are other ways to investigate teachers' work, teacher development, and the institutional practices and outcomes of schooling that start from the perspective of ongoing practice in a variety of contexts, and the issues and problems that arise in doing the work of teaching and schooling (for example, see Ball & Cohen, 1999). Without denying the potential importance of reform movements, we might seek a productive balance between studies that follow reform trajectories and studies that begin from the work of teachers and teaching. (emphasis added)

Seeking such a productive balance in our own analysis seems important at a time when states are engaged in a massive movement to more tightly couple standards and high stakes testing, (on the assumption that such policy levers will motivate student effort and teacher improvement), and when federal and state agencies are investing heavily in design experiments or legislative imperatives targeted at the high school. In the preliminary analysis reported here, we have concentrated on outlining the organizational conditions of teacher learning in two high schools. Subsequent analyses will turn more closely to the dynamic character of these conditions—how the norms of professional community play out in day-to-day interaction, for example—and to the significance of these conditions for teachers' classroom practice, teaching perspectives, and career commitments.

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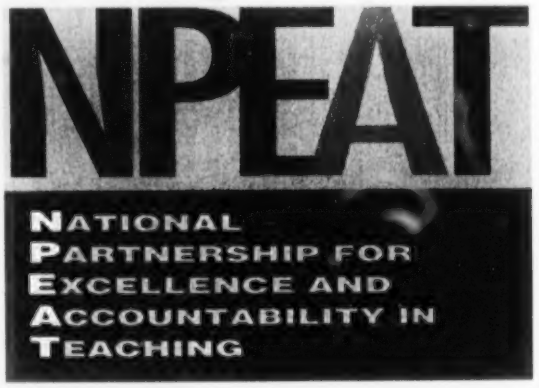

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